



STANDARDS FOR ENGINEERING WORKS

PREFACE AND SUPPLEMENTARY NOTES

2019

1 INTRODUCTION

The section of the Standards for Engineering Works, Preface and Supplementary Notes, 2019, is a result of the revision of Council's previous standards of 2013 and references the Aus-spec series of documents.

The engineering standards have been adopted both for internal use by council and for external use by developers, consultants and contractors.

With regard developments, the standards have been developed in order to facilitate the processing of engineering plan submissions, construction approvals and final plan releases.

2 ENGINEERING STANDARDS

Documents comprising the Engineering Standards are as follows:

1. Preface and Supplementary Notes (this document)
2. Design specification
3. Construction specification
4. Standard Drawings

Developers are to note the copyright provisions applying to the Design and Construction Specifications. Only Council may make copies of these documents.

3 RESPONSIBILITIES

A contractor carrying out subdivision work is responsible to the developer, not Council.

Council will hold the developer to whom the development approval was issued solely responsible for constructing the required development works to Council's standards and maintaining them during the specified period.

4 QUALIFIED PERSONS

Design plans shall be prepared to Council's standards by a person, either holding qualifications acceptable for Corporate Membership of the Institution of Engineers, Australia, or a person of proven experience in the field.

Construction shall be undertaken by persons certified/qualified in the field.

5 APPROVAL OF ENGINEERING DRAWINGS AND SPECIFICATIONS

The Construction Certificate engineering drawings and specifications submitted by an applicant shall comply with the current edition of the Standards for Engineering Works.

Council does not accept responsibility for checking all calculations and designs, rather it is the responsibility of the persons submitting the documents to ensure that the designs comply with Council's Standards for Engineering Works.

Council's approval of the drawings and specifications is conditional on the above basis and does not relieve the developer from liability for any errors or omissions.

The following sets out the requirements for drawings submission:

- First submission of drawings – One set A1 size, one set A3 size
- Intermediate submissions – One set A1 size
- Final set (for stamping) – Three sets A1 size, one A3 size, one electronic set
- All drawings to be unbound and unstapled
- If drawings are coloured, all submitted sets to be coloured

In addition, a document shall be submitted stating how each applicable consent condition has been complied with.

6 PUBLIC LIABILITY INSURANCE

Contractors engaged on development or subdivision work must take out Public Liability Insurance to the value of \$20 million. The policy should specifically indemnify Council from all claims arising from the execution of the works.

7 SUPERVISION OF CONSTRUCTION AND COMPLIANCE INSPECTIONS

The construction works are to be supervised by a suitably qualified and experienced civil engineer on a regular basis. This supervising engineer is to ensure compliance with the requirements of the specification, adherence to design plans and quality control of the works.

Prior to commencement of construction, the developer is required to submit a resume of the supervising engineer and construction contractor to Council for approval.

Upon completion of construction, the supervising engineer shall provide a certificate certifying that the works are in accordance with the approved drawings and specifications.

8 INSPECTION OF WORKS BY COUNCIL

8.1 General

The developer shall at all times give uninterrupted access and afford every facility for the examination of any works and materials as requested by an authorised council officer.

8.2 Notices

The developer shall supply to Council's supervisory officer the following notice and comply with the following requirements:

- (a) The name, address and telephone number of the contractor is to be submitted at least two days prior to the proposed date of commencement or any construction.
- (b) Twenty four hours (working day) notice shall be given by the developer (or his contractor) in respect to each of the following:
 - (i) Completion of formwork/stringlines for kerb and gutter
 - (ii) Opening of trenches ready for pipe laying
 - (iii) Placing of pipes in trenches prior to backfilling
 - (iv) Testing of water and sewer mains
 - (v) Completion of subgrade preparation before placing of pavement
 - (vi) Sealing of roadworks

8.3 Concrete Dockets

The developer shall submit docketts from the supplier of ready-mixed concrete.

8.4 Sealing Docketts

The developer shall, within seven (7) days of the sealing of any pavement, submit to council supply docketts and spraying records in respect of such work.

9 WORK-AS-EXECUTED DRAWINGS

9.1 General

At the conclusion of the construction works, work-as-executed (WAE) drawings shall be submitted. These drawings are required before the subdivision certificate will be released.

WAE drawings shall be provided in hard copy, PDF and DWG format, with related locational data, supplied in GPS format, preferably on USB or equivalent such as CD or DVD.

The WAE plans are generally the design plans amended to indicate the as-built nature of the work and shall include the following:

- any departure from the approved plans
- any additional work that has been undertaken
- the location of council conduits, subsoil drains associated with road pavements, stop valves, hydrants, sewer manholes, sewer junctions, inter-lot drainage inlet junctions and stormwater drainage pits
- all other details of works to be handed over to Council
- any existing services that have been removed or abandoned (either wholly or in part) shall be detailed.

- certification by the developer's registered surveyor that the WAE drawings are a full and accurate representation of the constructed works. This may be achieved by the stamping and signing of each plan.

9.2 Information on WAE for Sewer and Stormwater Junctions

Work-as-executed drawings shall indicate sewer and stormwater junction information for each lot as below:

- Chainage from downstream manhole/pit
- Depth to invert of main
- Sideline length (if present)
- Depth to invert of end of sideline (if present).

This information shall be depicted in dialogue boxes on the WAE drawings the following manner.

Sewer junction out of main

J	27.3
D	1.5
SL	3.0
SLD	0.9

Where:

- J is distance from downstream manhole
- D is depth to invert at the main
- SL is length of sideline (if one)
- SLD is depth to invert at property junction

Sewer junction out of manhole

JOMH	
D	1.5
SL	3.0
SLD	0.9

Where:

- JOMH indicates a junction out of a manhole
- D is depth to invert at the manhole
- SL is length of sideline (if one)
- SLD is depth to invert at property junction

Stormwater junction out of main

SWJ	27.3
SWD	1.5
SWSL	3.0
SWSLD	0.9

Where:

- SWJ is distance from downstream pit
- SWD is depth to invert at the main

- SWSL is length of sideline (if one)
- SWSLD is depth to invert at property junction

Stormwater junction out of pit

SOPIT	27.3
SWD	1.5
SWSL	3.0
SWSLD	0.9

Where:

- SOPIT indicates a junction out of a pit
- SWD is depth to invert at the pit
- SWSL is length of sideline (if one)
- SWSLD is depth to invert at property junction

9.3 GPS Electronic Data

The GPS electronic data below is required to be provided. The provider shall certify that the data provided complies with this clause.

Survey Type/Standard	Real Time Kinematic (RTK) by registered surveyor
Projection	GDA94 (MGA55)
Position quality	Within 20mm horizontal, 30mm vertical
File format	Co-ordinates to be provided in Excel *.xls spreadsheet or comma delimited *.txt or .csv format
Data required	Co-ordinates, AHD height, point codes and Levels in MGA (AHD)
Code legend	Code legend to be provided
Points required	
Property	<ul style="list-style-type: none"> • Individual lot boundary points
Roads	<ul style="list-style-type: none"> • Kerb and gutter at invert to show line and length, including at tangent points • Footpaths on both edges to show line and length • Traffic island around the outside edge to show size and shape
Water Supply	<ul style="list-style-type: none"> • Water mains at T-junctions • Hydrants at the centre of the cover • Stop valves at the centre of the cover • Meter boxes at the centre of the box
Sewer	<ul style="list-style-type: none"> • Manholes at centre of lid • Property connections at the intersection point with the main and at the end of the junction

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|------------|---|
| Stormwater | <ul style="list-style-type: none"> • Pits at the centre of the lid • Headwalls at the centre of the headwall • Property connections at the intersection point with the main and at the end of the junction • Water quality devices e.g. swales, bio-detention basins, at relevant points to provide the outline |
| Other | <ul style="list-style-type: none"> • Other significant infrastructure features |

10 MAINTENANCE PERIOD AND MAINTENANCE BOND

The maintenance period is 24 months and commences on the date of issue of the Subdivision Certification, Occupation Certificate, or equivalent.

The maintenance bond is an amount of 2.5% of the value of the total engineering works (minimum amount \$1,000). This bond is held by council to cover any defects or omissions which may arise or become apparent in the maintenance period. The maintenance bond is to be paid to Goulburn Mulwaree Council prior to issue of the Subdivision Certificate.

During the maintenance period council may direct the developer to rectify any omission or defect in the work which existed at the time of Notification of Completion or becomes apparent prior to the expiration of the maintenance period. If defects or omissions are not rectified within one month, council may rectify the omission or defect and apply the maintenance bond as payment of the cost for the rectification.

The maintenance period of any rectification work may for a period of 24 months from the date of rectification, however, at the expiration of the original 24 month maintenance period, the amount of the maintenance bond will be reduced in accordance with the value of the work under maintenance.

The nature of some defects e.g. water main breaks, may necessitate council's immediate action to rectify, in which case, the developer is responsible for reimbursing council's costs.

Upon expiration of the maintenance period, it will be the developer's responsibility to provide two weeks' notice of a request council to release the maintenance bond, to allow a final inspection by Council.

The requirement for the developer to rectify defects and omissions in accordance with this clause holds true after the expiration of the maintenance period in the case that such defects and omissions are undiscoverable by normal means but become evident at a subsequent time.

11 BONDS AND GUARANTEES FOR PERFORMANCE

Council will consider a request from a developer to accept a bond or guarantee from the developer in consideration of which the developer will perform certain works within a specified time in order that the Final Plans may be released. However, certain works cannot be bonded, including:

- Underground pipework including water supply, sewerage and stormwater drainage
- Roadwork up to sub-base level
- Kerb and gutter
- Works that are intended to be completed within 3 months.

Where Council accepts a bond for uncompleted work, the developer shall provide a written estimate of the uncompleted works, prepared by an experienced/qualified engineer or experienced contractor/estimator. Council will then apply a 25% surcharge on this estimate as the amount of bond to be submitted. Additionally, the developer shall submit a specified time for completion, with a maximum of 24months.

An administration charge applies to the establishment of a bond, as detailed in Council's Operational Plan.

12 FEES AND CONTRIBUTIONS

12.1 Subdivision Inspection Fees

Fees for examinations of engineering drawings, inspections of subdivision works and release of Final Plans are applicable and indicated in the annual Operational Plan.

12.2 Developer Contributions

Council has in place s94, s94A and s64 plans which provide for developer contributions for the engineering works of:

- Water supply
- Sewerage
- Stormwater Drainage
- Roads and Traffic
- Open Space

13 POLICIES AND GUIDELINES

From time to time, Council may adopt policies and guidelines that may apply to development, engineering design and construction, which shall be complied with.

14 MISCELLANEOUS

14.1 Street Trees

The developer is required to plant one tree for each lot and two trees for corner lots. The species of tree should be in accordance with the themes contained in the Goulburn Street Tree Master Plan and be approved by Council's Landscape Planner.

Trees shall be advanced specimens having a container volume of 25 litres and a height of at least 1.5m. The trees shall be staked with three 1800 mm x 50 mm square hardwood stakes and loosely secured with hessian webbing.

The planting hole is to be twice the width and one and a half times the depth of the pot of the tree to be planted. The hole shall be filled with soil suitable for tree growth being made up of free draining coarse sand 50%, loam 20% and composted organic matter 30% and having a neutral pH.

The trees are to be planted in a workmanlike fashion and maintained by the developer for the full 12 month maintenance period. Any plants that die or are vandalised during the maintenance period are to be replaced by the developer within one month.

14.2 Rural Access off a Public Road

Rural access gateways off public roads are to be:

- located to ensure sight distance of 150m in both directions
- set-back from the road boundary fence in accordance with the relevant standard drawing.

14.3 Liquid Trade Wastes

If the Developer intends to dispose of industrial trade wastes to the sewer, it will be required that a Trade Waste Agreement be entered into with Council. Such Agreement will document the acceptability of the liquid wastes to be disposed of to the sewerage system taking into account the concentration, type and volume of the liquid wastes. Charges apply to the disposal of liquid trade wastes to Council's sewerage system.